



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,570	04/03/2001	Christof Eberspacher	225/49834	8702
7590 CROWELL MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER SAVAGE, JASON L	
			ART UNIT 1775	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
2 MONTHS	03/19/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

MAILED  
MAR 19 2007  
GROUP 1700

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/824,570  
Filing Date: April 03, 2001  
Appellant(s): EBERSPACHER ET AL.

---

Richard Diefendorf  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the supplemental appeal brief filed 5-24-06 appealing from the  
Office action mailed 12-30-04.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-2, 4, 16 and 56-59 are rejected under 35 U.S.C. 103(a) as unpatentable over Kawamura et al. (US 5,249,661).

Kawamura teaches a wear-resistant coating on a synchronizing ring formed by flame spraying (col. 2, ln. 24-28). The coating contains between 5-30% by weight of solid lubricating ceramic particles which may be oxides, carbides, or nitrides of elements such as Ti, Si, B, Al, Mn, Cu, Co, Ni, Na, Cr, W and V (col. 4, ln. 14-25). The porosity of the coating is between 5-30% (col. 4, ln. 51-60).

Regarding the limitation that the solid lubricant is permitted to be over 30% and up to 40%, it is unclear if the recitation that the lubricant is "permitted to be", emphasis added, within the claimed range is a recitation that the lubricant be within the claimed range or that it is merely a preferred embodiment. For the purposes of examination, the phrase has been treated as meaning that the limitation is a requirement of the claim and not merely a preferred embodiment.

Regarding the limitation, Kawamura teaches that the loading may be 30 wt% (col. 4, ln. 51-60). The claim merely requires the lubricant to be over 30 wt% which could be any amount including 30.01 wt%. Absent a teaching of the criticality of the lubricant being present in an amount over 30 wt%, such as 30.01 wt% as compared to being present in an amount of 30.00 wt% as is taught by Kawamura, it would not provide a patentable distinction over the prior art. The proportions of solid lubricants in the claimed coating and that of the prior art are so close that *prima facie* one skilled in the art would have expected them to have the same properties. Appellant has

produced no evidence to rebut that *prima facie* case, Titanium Metals Corporation of America V. Banner, 227 USPQ 773.

Furthermore, Kawamura teaches that loadings of lubricants greater than 30 wt% may overexceed the abrasion of the object member (col. 4, ln. 30-35). Although Kawamura teaches that such a loadings within the claimed range is not desirable, all of the disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art even though the art teachings relied upon are phrased in terms of a non-preferred embodiment or even as being unsatisfactory for the intended purpose, *In re Boe*, 148 USPQ 507 (CCPA 1966); *In re Smith*, 65 USPQ 167 (CCPA 1945); *In re Nehrenberg*, 126 USPQ 383 (CCPA 1960); *In re Watanabe*, 137 USPQ 350 (CCPA 1963). Upon reading the teaching of Kawamura, one of ordinary skill would find it obvious to go over 30 wt% to achieve a desired benefit such as increasing the dynamic friction coefficient if one were willing to forego the added abrasion that goes along with going above 30 wt%.

Regarding the limitation that the particle size be less than 180  $\mu\text{m}$ , Kawamura teaches that the particle sizes prior to spraying are -150 mesh and -250 mesh (approximately 99  $\mu\text{m}$  and 58  $\mu\text{m}$ , respectively). Therefore, absent a showing to the contrary, it would be reasonable to expect the particles of Kawamura would be well within the claimed range of less than 180  $\mu\text{m}$ .

Regarding claim 2, although Kawamura does not teach the specific solid lubricants which are claimed, it teaches that the solid lubricating ceramic particles may be oxides, carbides, or nitrides of elements such as Ti, Si, B, Al, Mn, Cu, Co, Ni, Na, Cr,

Art Unit: 1775

W and V (col. 4, ln. 14-25). It is the position of the Examiner that the teaching that the particles may be an oxide of an element such as Ti is a teaching that the lubricant is  $TiO_2$  (col. 4, ln. 16-17). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have selected an oxide of titanium or a nitride of boron as the lubricating particle since Kawamura states that they are suitable materials. Absent a teaching of the criticality of the claimed materials such as hexagonal boron nitride, it does not provide a patentable distinction over the prior art.

Regarding claims 4 and 16, Kawamura teaches that the coating further includes a molybdenum alloy which may include elements such as Si and Ni (col. 3, ln. 56-59). Kawamura exemplifies that the molybdenum alloy contains Si and Ni (col. 5, ln. 67-68).

Regarding claims 56-59, Kawamura teaches that the porosity is between 5 to 30% (col. 4, ln. 51-60). A synchronizer ring of Kawamura having a porosity between 5 to 20% would meet the claim limitations.

New Grounds of Rejection:

Claims 1 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamura et al. (US 5,249,661).

Kawamura teaches a wear-resistant coating on a synchronizing ring formed by flame spraying (col. 2, ln. 24-28). Kawamura exemplifies an embodiment wherein the coating contains 35% by weight of solid lubricating ceramic particles and has a porosity of 5% (col. 6, ln. 63 - col. 7, ln. 5 and Comparative Example 1 in Tables 1 and 2)).

Regarding the limitation that the particle size be less than 180  $\mu\text{m}$ , Kawamura teaches that the particle sizes prior to spraying are -150 mesh and -250 mesh (approximately 99  $\mu\text{m}$  and 58  $\mu\text{m}$ , respectively). Therefore, absent a showing to the contrary, it would be reasonable to expect the particles of Kawamura would be within the claimed range of less than 180  $\mu\text{m}$ .

#### **(10) Response to Argument**

Appellant argues that evaluating the disclosure provided by Kawamura for what it fairly teaches one of ordinary skill in the art necessarily leads to a conclusion that a synchronizer ring comprising a tribological coating which is permitted to be up to 40% by weight of a solid lubricant is not to be provided, since such a coating would provide abrasion which may be overexceeded. Appellant further argues that modifying Kawamura to have a solid lubricant content of over 30% and up to 40% by weight as claim 1 requires is certainly not made obvious by the Kawamura patent disclosure itself and that such a modification is also not suggested by anything else properly relied on by the Examiner.

As was set forth in the new grounds of rejection under 35 USC 102(b) above, Kawamura exemplifies an embodiment wherein a synchronizer ring comprises the solid lubricant in an amount of 35% by weight, 5% porosity and particle sizes less than 180  $\mu\text{m}$  and thus anticipates the claim limitations.

Furthermore, as was recited in the grounds of rejection under 35 USC 103(a) above, while Kawamura teaches the solid lubricant be present up to 30 weight % and

not over 30 weight % as is claimed, Appellant has failed to produce evidence to rebut the prima facie case that one skilled in the art would have expected a coating containing 30.00 wt% of lubricants to have the same properties as a coating containing 30.01 wt% of lubricants. Absent a showing of how a coating containing a lubricant content of 30.01 wt% provides a verifiable distinction over the coating of the prior art containing 30.00 wt% of the lubricant, the claims are not patentable over the prior art.

As was further set forth above, Kawamura teaches coatings containing over 30% by weight of solid lubricants however it teaches it as being undesirable. Upon reading the teaching of Kawamura, one of ordinary skill would find it obvious to go over 30 wt% to achieve a desired benefit such as increasing the dynamic friction coefficient if one were willing to forego the added abrasion that goes along with going above 30 wt%.

Appellant further argues on page 5 of the Brief that the Examiner's citation of lines 51-60 in column 4 in the Kawamura patent refers to the porosity and not the solid lubricant content. The Examiner agrees that the cited lines reference the porosity, however the citation was an oversight on the part of the Examiner. As was set forth in the first paragraph of the rejection in the Final Office Action dated December 30, 2004, the solid lubricant content of up to 30% by weight is taught in column 4, lines 14-25.

Appellant also argues that under U.S. law, where there is a range disclosed in the prior art, and the claimed inventions falls within that range, any presumption that the claimed invention is obvious will be rebutted if it can be shown that the prior art taught away from the claimed invention. However, all of the disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art even though the art

Art Unit: 1775

teachings relied upon are phrased in terms of a non-preferred embodiment or even as being unsatisfactory for the intended purpose, *In re Boe*, 148 USPQ 507 (CCPA 1966); *In re Smith*, 65 USPQ 167 (CCPA 1945); *In re Nehrenberg*, 126 USPQ 383 (CCPA 1960); *In re Watanabe*, 137 USPQ 350 (CCPA 1963). Upon reading the teachings of Kawamura including comparative example 1, one of ordinary skill would find it obvious to go over 30 wt% to achieve a desired benefit such as increasing the dynamic friction coefficient if one were willing to forego the added abrasion that goes along with going above 30 wt%.

Appellant also notes the Examiner's comment on the particle size however concludes that nothing in the cited portion of Kawamura or in any other portion suggests that the solid lubricant have a particle size of no more than approximately 180  $\mu\text{m}$ . To the contrary, since Kawamura teaches using solid lubricating ceramic particles which prior to spraying which have sizes which are well within the particle size range claimed by Appellant, it would be reasonable to expect that the size of the particles after spraying would also be well within the range claimed by Appellant. The Patent and Trademark Office can require Appellant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Appellants where rejection based on inherency under 35 U.S.C. § 102 or on *prima facie* obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to

manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid **sua sponte dismissal of the appeal** as to the claims subject to the new ground of rejection:

**(1) Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

**(2) Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR

Art Unit: 1775

41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Art Unit: 1775

Respectfully submitted,



Jason Savage

March 15, 2007

**A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:**

Conferees:



JENNIFER MCNEIL  
SUPERVISORY PATENT EXAMINER

cc 



GREGORY MILLS  
QUALITY ASSURANCE SPECIALIST